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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,824	07/10/2003	Hans-Peter Manner	SMB-PT082 (P 03 305 M US)	2688
3624	7590	07/08/2005	EXAMINER	
VOLPE AND KOENIG, P.C. UNITED PLAZA, SUITE 1600 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103			EWALD, MARIA VERONICA	
			ART UNIT	PAPER NUMBER
			1722	

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/616,824

Applicant(s)

MANNER, HANS-PETER

Examiner

Maria Veronica D. Ewald

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>07/10/03&01/02/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

13. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on July 10, 2002. It is noted, however, that applicant has not filed a certified copy of the 102 31 093.9 application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 112

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 16 states "closure needles can respectively be axially introduced from outside into a mounting position and fixed by a retaining cap which can be screwed to an outside of the injection molding nozzle..." The phrase "can respectively be axially introduced from outside into a mounting position..." imposes a method/process limitation and does not provide further physical limitations to the apparatus claimed and thus, renders the claim indefinite.

Claim 17 states "closure needles can be pushed from an inner side into a bushing receiving them before insertion into the nozzle body and fixed in an axial direction by a shoulder or a cross section enlargement..." The phrase "...can be pushed

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from an inner side into a bushing receiving them before insertion into the nozzle body...” imposes a method process limitation and does not provide further physical limitations to the apparatus claimed and thus, renders the claim indefinite.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Guenther (EP0447573). In the cited patent abstract, Guenther teaches an injection nozzle for plastic comprising at least two outlet openings (item 24 – figure 1) in an end region thereof, directed towards different sides, for discharging to different sprue openings (item 68 – figure 1) and with a feed channel for the plastic to the outlet openings (item 22 – figure 1), wherein the outlet openings directed toward different sides respectively, have a needle closure (item 50 – figure 1) with a closure needle adjustable in a direction of the outlet opening and a drive for displacing the closure needles into a closing position (item 62 – figure 1).

Claim 1 – 3, 5 – 10, 14 – 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Babin (U.S. 6,162,044). With respect to claim 1, Babin teaches an injection nozzle (item 12 – figure 2) for plastic comprising at least two outlet openings

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(item 104 – figure 2) in an end region thereof, directed towards different sides (column 2, lines 63 – 65), for discharging to different sprue openings (item 144 – figure 2) and with a feed channel for the plastic to the outlet openings (item 50 – figure 2), wherein the outlet openings directed toward different sides respectively (column 2, lines 63 – 65; column 3, lines 11 – 15), have a needle closure (item 50 – figure 1; column 3, line 30) with a closure needle adjustable in a direction of the outlet opening (item 114 – figure 2; column 3, lines 30 – 31) and a drive for displacing the closure needles into a closing position (item 72 – figure 1; column 3, lines 3 – 6).

With respect to claims 2 and 3, Babin further teaches that the feed channel (item 50 – figure 2) comprises a separate feed channel (item 118 – figure 2) for the plastic for each of the lateral outlet openings provided with a closure needle and the feed channels are arranged outside a middle area of the injection molding nozzle (column 3, lines 40 – 42). The reference further teaches that the feed channels for the plastic entering the outlet openings are before mouths thereof, near ends of the individual closure needles (items 114, and 118 – figure 2).

With respect to claims 5 and 6, Babin teaches that the closure needles of the outlet openings have a common drive for displacement into the closing position (column 2, lines 66 – 67; column 3, lines 1 – 9). In addition, the reference teaches that the closure needles in a closing direction, have a cross section enlargement or a shoulder located before the feed channel entry (column 3, lines 30 – 31) for the plastic as an action surface for injection molding pressure for opening the closure needle, and the

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drive acting in the closing direction can be disconnected and/or overcome during opening of the respective closure needle (column 3, lines 5 – 10).

With respect to claims 7 – 10, Babin teaches that the injection nozzle has compression springs or displacement means engaging mechanically on the closure needles and are provided for displacing the closure needles into the closing position and are located at ends remote from the outlet opening (column 3, lines 4 – 10); a common drive element provided for displacing a plurality or all of the closure needles in a closing direction (column 2, lines 66 – 67), and wherein the drive element is a displacement member movable between ends of the closure needles and comprises a cross-section that is at least one of a cone, conical, tapered, a cam disk or eccentric disk (items 72, 78, and 80 – figure 1; column 3, lines 1 – 9). In addition, the reference teaches that the injection nozzle is further comprised of a push/pull rod displaceable in an axial direction is located centrally within the injection molding nozzle or for rotating a cam disk or eccentric disk, a rotary rod is provided centrally in the injection molding nozzle (item 62 – figure 1; column 3, lines 3 – 5). Furthermore, the reference teaches that the drive element engaging the closure needles is coupled and connected with the closure needles such that one movement serves for closing and an opposite movement serves for pulling back the closure needles into an opening position (column 3, lines 1 – 9).

With respect to claims 14 – 18, Babin teaches that a rod, arranged in a center of the nozzle housing (14) for a common drive of the closure needles is provided or coupled with a rotary or axial drive (column 2, lines 66 – 67; column 3, lines 1 – 9). The

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reference further teaches that the outlet openings and the closure needles displaceable therein are arranged in bushings inserted into a housing of the injection molding nozzle (item 100 – figure 2; column 3, lines 18 – 22). In addition, the closure needles can respectively be axially introduced and fixed by a retaining cap which can be screwed to an outside of the injection molding nozzle and includes a mouth of the outlet opening (item 124 – figure 2; column 4, lines 4 – 10). Babin also teaches that the closure needles can be pushed in from a bushing receiving them (item 100 – figure 2; column 3, lines 18 – 20, 33 – 35) and are fixed in an axial direction by a shoulder or a cross section enlargement (column 3, lines 44 – 45, 53 – 57), such that displacement movement is limited to a closing direction and the closure needle is delimited in the radial direction. Furthermore, Babin teaches that injection molding nozzle has more than two outlet openings with closure needles displaceable therein (column 2, lines 63 – 65) which are arranged on one nozzle housing (column 2, lines 64 – 65) and are movable in the closing direction with the same drive element (column 2, lines 66 – 67; column 3, lines 1 – 3).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Babin in view of Halbach (U.S. 2,471,683). Babin teaches the characteristics previously described but does not teach that the outlet openings are arranged radially.

In an injection molding apparatus with improved multiple nozzles, Halbach teaches that there is a die plate with a plurality of suitably-spaced nozzle-receiving apertures (column 2, lines 41 – 42). There is a single source or central injection passage for supplying molten material under pressure and has pivotally connected or swiveled to it, a head, having laterally extending branches and provided with integral nozzles and extending at right angles thereto through the apertures (column 3, lines 5 – 10). This reads on the Applicant's claim that the outlet openings are arranged approximately radially and generally in one plane extending perpendicularly to a longitudinal mid-axis of the injection molding nozzle. Halbach further teaches that the branched configuration has the advantages of enabling the mold to be filled more quickly, completely and uniformly, thus, producing a product with greater uniformity (column 1, lines 14 – 18). In addition, the reference teaches that the branched configuration minimizes heat loss and maintains fluidity of the molten material (column 2, lines 24, 33 – 35).

It would have been obvious at the time of the Applicant's invention to one of ordinary skill in the art to modify the injection molding apparatus of Babin with the branched passageways of Halbach for the purpose of filling the mold quickly while at the same time maintaining the fluidity of the molten material and producing a more uniform product.

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Claims 11 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Babin in view of Anderson (U.S. 4,662,837). Babin teaches the characteristics previously described but does not teach that the injection nozzle have a thermal gap.

In an injection molding apparatus, Anderson teaches a die assembly with an injection nozzle for delivering molten resin through the die cavity (column 2, lines 36 – 39). Molten plastic material travels through an injection conduit (item 11 – figure 1) and branches at right angles into a main manifold channel (item 13 – figure 1) and then to injection nozzles (item 16 – figure 1; column 3, lines 51 – 53). Anderson further teaches that there is a gap (item 43 – figure 5) into which thermal expansion of the nozzle can occur (column 4, lines 48 – 49). This expansion gap exists between the second component and the nozzle (column 5, lines 18 – 19). This reads on the Applicant's claim that the injection molding nozzle be further comprised of a thermal expansion gap in the region of the housing division and is sealed by an overlap at least in a region of the feed channels. The reference also teaches that the overlap is formed by sliding sleeves or a respective sliding sleeve arranged on an inside or outside of the feed channel (item 40 – figure 5; column 5, lines 37 – 42).

It would have been obvious at the time of the Applicant's invention to one of ordinary skill in the art to modify the injection molding apparatus of Babin with the expansion gap of Anderson for the purpose of providing space for the nozzle to expand which occurs as the assembly reaches the operating temperature (column 5, lines 28 – 29).

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Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Veronica D. Ewald whose telephone number is 571-272-8519. The examiner can normally be reached on M-F, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MVE

Joseph S. Del Sole
7/5/05
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